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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,173	11/18/2003	John Christopher Adams	043197.271470	5997

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ALSTON & BIRD LLP
BANK OF AMERICA PLAZA
101 SOUTH TRYON STREET, SUITE 4000
CHARLOTTE, NC 28280-4000

EXAMINER	
DESAI, ANISH P	
ART UNIT	PAPER NUMBER
1771	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/28/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/717,173	ADAMS ET AL.	
	Examiner	Art Unit	
	Anish Desai	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 August 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,10-15,17,19-21,24,26 and 31-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,10-15,17,19-21,24,26 and 31-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The Request for Continued Examination (RCE) received on 08/08/06 is fully considered.

1. Claims 1-7, 10-15, 17, 19-21, 24, 26 and 31-37 are pending. Claims 8-9, 16, 18, 22-23, and 27-30 are cancelled.

2. Art rejections of Mori (US 5,908,687) in combination with Hodakowski et al. (US 4,260,703) are withdrawn because there is no motivation to combine Hodakowski with Mori. However, upon further consideration a new ground of rejection is made in view of Arai (US 6, 372, 332 B1).

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 2, 10-11, 13-15, 17, and 32-34 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Arai (US 6, 372, 332 B1).

With respect to claims 1, 2, 10-11, 13-15, 17, 32-34, Arai discloses a thermosensitive stencil paper (a heat-sensitive stencil master) having a porous resin layer (solid foam) (abstract) provided on a thermoplastic resin film (heat-sensitive polymeric film) of thickness of 0.5 to 5 μm (column 9, lines 53-55), by coating a porous resin layer formation coating liquid (resin) including a water-in-oil (W/O) emulsion of a resin on the thermoplastic resin film and drying the coating liquid (abstract). Arai further teaches that to prepare the W/O emulsion an emulsifier (foaming agent/surfactant) having HLB value of 8 to 20 is used (column 8, lines 1-7). Additionally, Arai discloses that when necessary the porous resin layer formation coating liquid may comprise a

crosslinking agent, an antistatic agent, an agent for preventing the sticking etc. (column 8, lines 44-45). It would have been obvious to one having ordinary skill in the art at the time the invention was made to add a crosslinking agent in the coating liquid (resin) and crosslink the coating liquid, motivated by the desire to prevent cracks in the coating layer while it is drying. Moreover, Arai teaches that the porous resin layer may (solid foam) further comprise an antistatic agent (column 8, line 44) and emulsifier (foaming agent) such as sulfate (column 8, line 17). According to Arai, in order to prevent the thermosensitive stencil paper from sticking to the thermal head in the course of making the perforations in the thermoplastic resin film, the thermosensitive stencil paper may further comprise, a sticking preventive layer which is provided on the other side of the thermoplastic resin film, opposite to the porous resin layer with respect to the thermoplastic resin film (column 9, lines 29-35).

Regarding claims 10-11, the limitations of "resin is cross-linked by irradiation" and "resin is cross-linked by electron beam irradiation" are product by process limitations. The products by process claims are not limited to the manipulations of the recited steps, only the structure implied by the steps. "Even though product by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product by process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289, 292 (Fed. Cir. 1983). In the instantly claimed subject matter, a heat-sensitive stencil master of the applicant comprises a heat-sensitive polymeric film having thickness of less than 10 μm and, coated thereon, a solid foam comprising a cross-linked resin and a foaming agent. Arai discloses a thermosensitive stencil paper having a porous resin layer (solid foam) (abstract) provided on a thermoplastic resin film (heat-sensitive polymeric film) of thickness of 0.5 to 5 μm (column 9, lines 53-55) by coating a porous resin layer formation coating liquid (resin) including a water-in-oil (W/O) emulsion of a resin on the thermoplastic resin film and drying the coating liquid (abstract). Additionally, accordingly Arai when necessary the porous resin layer formation coating liquid may comprise a crosslinking agent (column 8, lines 44-45) and an emulsifier (foaming agent) (column 8, lines 1-2). Thus, the porous resin layer of Arai is similar to the solid foam comprising a cross-linked resin and a foaming agent of the applicant.

With respect to claims 32-34, Arai teaches that the bending rigidity (stiffness) of the thermosensitive paper is in the range of 10 to 50 mN (column 9, lines 60-65) and deposition amount (coating weight) of the porous resin layer is in the range of 2 to 30 g/m^2 (column 8, lines 61-65), which reads on stencil master having a stiffness (mN) to coating weight (g/m^2) ratio of at least 6, at least 8, and at least 10 as claimed in claims

32-34 respectively. Accordingly, Arai anticipates or strongly suggests the claimed subject matter.

4. Claims 3-7, 19-21, 24, 26, 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai (US 6, 372, 332 B1) in view of Mori (US 5,908,687).

The invention of Arai is previously disclosed and is applicable to claims 24, 26 and 35-37. Arai further teaches that the bending rigidity of the thermosensitive stencil paper can be adjusted by controlling the deposition amount of the porous resin layer and adding a filler to the porous resin layer (column 10, lines 12-15). Arai is silent as to teaching of solid foam or solid porous coating incorporates a fibrous material or filler (claims 3, 19), fibrous material has a diameter of greater than 1 μm and less than 10 μm, and a length in the range of 100 μm to 500 μm (claims 4-5), fibrous material or filler is carbon fibers (claims 6-7 and 19), carbon fibers has diameter of greater than 1 μm and less than 10 μm and a length in the range of 100 μm to 500 μm (claims 20-21), and the resin is cross-linked by electron beam irradiation (claim 24). However, Mori teaches a heat-sensitive stencil including a thermoplastic resin film and a porous resin layer formed thereon, wherein the porous resin layer comprises a filler (Abstract and column 2, lines 45-46). According to Mori, the filler is in the form of fibers having average length in the range of 30 μm to 10 mm (10,000 μm) (column 2, lines 48-19) and average diameter of at least 4 μm (column 2, lines 59-60). Further, Mori teaches that the fibers may be for example, natural fibers, mineral fibers, glass fibers, carbon fibers etc. (column 2, line 50-53). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add the fibrous filler such as carbon fibers

of dimensions (length and diameter) as taught by Mori, in the porous resin layer of Arai, motivated by the desire to provide satisfactory tensile strength and bending stiffness to the thermosensitive stencil paper of Arai.

5. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arai (US 6, 372, 332 B1) in view of Shiraki et al. (US 4, 507, 458).

The invention of Arai is previously disclosed. Arai further teaches that W/O resin emulsion can be acrylic polymer, ester polymer, urethane polymer etc., and modified polymers and copolymers comprising monomer constituting above-mentioned polymers copolymer (column 5, lines 34-40). Arai is silent as to teaching of resin is a polyurethane cross-linked through unsaturated acrylate groups. However, Shiraki teaches a crosslinked urethane acrylate resin that excel in both elongation at break and tensile strength can be used for base coatings for paper and polyethylene films (abstract and column 1, lines 1-7). The examiner recognizes that the secondary reference of Shiraki is not in the applicant's field of endeavor (i.e. a heat-sensitive stencil master). However, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the secondary reference of Shiraki is reasonable pertinent to the particular problem with which the applicant is concerned. According to the specification page 5, lines 24-29, "Good results have been achieved by electron beam curing of emulsions based on acrylate derivatives of polyol

polyurethanes. Using a dose in the range 3-5 Mrad and acceleration voltages in the range 125-200 kVolts significant increases have been achieved in both the stiffness and tensile strength of the solid foam coatings." The urethane acrylate resins of Shiraki are also crosslinked using radiation (column 4, lines 28-31) and excel in elongation at break and tensile strength (column 1, lines 1-7). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use urethane-acrylate of Shiraki, in the porous resin layer coating of Arai, motivated by the desire to provide excellent tensile strength to the porous resin layer coating.

6. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arai (US 6, 372, 332 B1) in view of Mori (US 5,908,687) as applied to claim 1 above, and further in view of Yoshida (Japan Patent Application No. 11-179699). US 6,357,347 to Yoshida is relied on as equivalent form of Japan Patent Application No. 11-179699 for convenience.

The invention of Arai as modified by Mori is previously disclosed. Arai is silent as to teaching of polymeric fibers are selected from the group consisting of polyester fibers and polyvinyl alcohol fibers. However, Yoshida teaches a stencil sheet formed by laminating a thermoplastic resin film and a porous support wherein the porous support comprises polyester fibers (Column 2, lines 59-61), which are preferred from point of view of heat stability at perforation (column 3, lines 44-45). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use the polyester fibers of Yoshida and add to the porous resin layer of Arai, motivated by

the desire to improve the tensile strength and provide heat stability at perforation of the thermosensitive stencil paper of Arai.

Response to Arguments

7. Applicant's arguments received on 08/08/06 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anish Desai whose telephone number is 571-272-6467. The examiner can normally be reached on Monday-Friday, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

APD

TERREL MORRIS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700